

## CLAIMS

1. Power supply unit for a commutator of an electric motor, comprising a brush holder support with brushes arranged in it and interacting with the commutator, the power supply unit comprising an electronics housing formed by the brush holder support and a protective cover connected to it, the electronics housing sealing an electronic circuit module arranged in an interior thereof in a functionally reliable manner in relation to the surroundings.
2. Power supply unit as defined in claim 1, wherein the brushes arranged in the brush holder support are arranged outside the interior formed by the electronics housing.
3. Power supply unit as defined in claim 1, wherein the electronics housing extends in an annular shape around a receiving chamber for the commutator.
4. Power supply unit as defined in claim 1, wherein the brush holder support is produced from an electrically non-conductive material.
5. Power supply unit as defined in claim 1, wherein the brush holder support has a supporting plate extending transversely to an axis of rotation of the commutator.

6. Power supply unit as defined in claim 5, wherein the brush holder support has brush channels arranged on a side of the supporting plate facing the protective cover and surrounded by channel housings.
7. Power supply unit as defined in claim 1, wherein the brush holder support has an annular member surrounding a receiving chamber for the commutator.
8. Power supply unit as defined in claim 1, wherein the protective cover extends radially to an axis of rotation of the commutator outside the receiving chamber for the commutator.
9. Power supply unit as defined in claim 8, wherein the protective cover surrounds the receiving chamber for the commutator with an inner wall.
10. Power supply unit as defined in claim 9, wherein the inner wall extends in continuation of the annular member of the brush holder support.
11. Power supply unit as defined in claim 9, wherein the inner wall abuts in a sealed manner on the annular member of the brush holder support.
12. Power supply unit as defined in claim 1, wherein the protective cover has an outer wall.
13. Power supply unit as defined in claim 12, wherein the outer wall terminates in a sealed manner with the supporting plate of the brush holder support.

14. Power supply unit as defined in claim 12, wherein the outer wall of the protective cover is fixed to the supporting plate of the brush holder support.
15. Power supply unit as defined in claim 13, wherein the protective cover is fixed to the supporting plate of the brush holder support with a bead.
16. Power supply unit as defined in claim 15, wherein the bead essentially engages around an outer contour of the supporting plate.
17. Power supply unit as defined in claim 1, wherein the protective cover forms a cooling member for at least one power component of the circuit module.
18. Power supply unit as defined in claim 17, wherein the at least one power component abuts on the protective cover acted upon by a force.
19. Power supply unit as defined in claim 17, wherein the at least one power component abuts with its cooling member on an inner side of the protective cover.
20. Power supply unit as defined in claim 17, wherein the at least one power component abuts on a heat contact point of the protective cover provided for it.
21. Power supply unit as defined in claim 20, wherein the at least one power component abuts with its cooling member on a flattened area of the inner side of the protective cover.

22. Power supply unit as defined in claim 21, wherein the flattened area is arranged on the inner side of the outer wall of the protective cover.
23. Power supply unit as defined in claim 17, wherein the protective cover is provided with arms protruding into the interior, the cooling member of the at least one power component being located between said arms.
24. Power supply unit as defined in claim 23, wherein the arms fix the cooling member of the at least one power component on the protective cover by means of arm ends bent over in the direction of the cooling member of the at least one power component.
25. Power supply unit as defined in claim 23, wherein the arms hold the cooling member pressed against the protective cover with their bent arm ends.
26. Power supply unit as defined in claim 1, wherein the protective cover consists of metal.
27. Power supply unit as defined in claim 26, wherein the protective cover is produced from a plastically deformable metal.
28. Power supply unit as defined in claim 26, wherein the protective cover is produced from a light metal.
29. Power supply unit as defined in claim 1, wherein the circuit module has an annular circuit board arranged in the protective cover.

30. Power supply unit as defined in claim 1, wherein the power components are arranged on a side of a circuit board of the circuit module facing the brush holder support.
31. Electric motor comprising a motor housing, a rotor arranged in the motor housing so as to be rotatable and a brush holder support arranged in the motor housing, wherein the electric motor being provided with a power supply unit comprising a brush holder support with brushes arranged in it and interacting with the commutator, the power supply unit comprising an electronics housing formed by the brush holder support and a protective cover connected to it, the electronics housing sealing an electronic circuit module arranged in an interior thereof in a functionally reliable manner in relation to the surroundings.
32. Electric motor as defined in claim 31, wherein the protective cover is arranged in the motor housing so as to have cooling air flowing around it.
33. Electric motor as defined in claim 32, wherein the cooling air passes through a space between the motor housing and the protective cover.
34. Electric motor as defined in claim 32, wherein the cooling air passes through the receiving chamber for the commutator.